

Supervenience and the theory of experience

Assessing the explanatory and descriptive power of a formal concept

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1. The concept of supervenience

Over the last decades, the concept of supervenience has gained increasing attention in several fields of philosophical inquiry. Generally speaking, a template for supervenience is:

A set of properties (B-properties) supervene upon another set of properties (A-properties) if no two possible things can differ with respect to their B-properties without also differing with respect to their A-properties.¹

Furthermore, supervenience is usually implicitly considered as a one-sided dependence relation, according to which:

a set of properties B supervenes upon another set of properties A, if the two systems are in a relationship such that there cannot be changes in the supervenient set B without changes in set A, while there can be changes in A - the basis low-level - without changes in the set B.²

1 Cf. McLAUGHLIN & BENNETT 2014; CHALMERS 1996, 32 f.

2 Cf. KIM 1998 and 1999. According to JOHANSSON (2002), the concept of supervenience involves the following three requirements: non-entailment requirement (i.e. no properties of the set A can be entailed in the set B), indiscernibility requirement (as expressed by the first definition above), existential dependence requirement (as expressed by the second definition).

This rather broad understanding of the concept of supervenience promises to provide a unifying framework to address and differentiate dependence relations among elementary and higher-order properties. Given its unifying potential, it comes as no surprise that the concept of supervenience has been adopted in order to define property-relations in such different fields of inquiry as those concerning the mind-body problem, the origin and the status of moral properties, and the dependence of modal truths on non-modal truths, etc.

Assuming that the theoretical power of any concept is not only due to its consistency on the meta-theoretical level, but also to its descriptive and explanatory potential for the investigation of concrete phenomena, the aim of this issue of *Metodo* was to test the concept of supervenience in different domains of application. Particularly, the aim was to assess the potentials and the limits of adopting the concept of supervenience in order to provide both a descriptive and an explanatory account of the relation between different moments – or different properties – of experience.

The leading questions underlying this issue can be considered in partial continuity with those underlying *Metodo's* 2013 issue on *Naturalism and Subjectivity*, which aimed at examining whether and how naturalism can be considered to be compatible with the irreducible subjective character of experience. The problems of whether naturalism is a viable option to address the structures of experience, and of *which kind of naturalism* can be suitable to this aim, re-emerge in several papers collected in this issue in connection with supervenience and with the quest for a unifying framework to address relations among properties. Indeed, one rather unquestioned assumption in most theories of supervenience is that basic or elementary properties are natural (or physical) properties. As we will see, several papers in this issue explicitly address such an assumption.

Besides some general claims that can be made regarding, for instance, the supervenience of moral properties upon physical properties, or the supervenience of conscious states upon bodily states, the current debate on supervenience seemed to be in need of further contributions, differently related to naturalism. Particularly, three sets of problems seemed to require a reassessment of naturalism in relation to supervenience:

- (1) On which basis can we say that the application of the concept of supervenience responds to the unifying expectations awakened by the above mentioned definition? To answer this question, an analysis of the assumptions concerning the status of both basic and higher-order properties is required: in which cases can we assume that the basic

properties are well defined in and for themselves, i.e., independently of the whole to which they belong? Is it always appropriate to conceive of basic properties as natural or physical ones?

- (2) Depending on the answer to the previous question, one would either defend a reductionist or a non-reductionist claim concerning higher-order properties. In what sense can the concept of supervenience be said to fit one account or the other? Again, can we assume that natural or physical properties are in all cases the most elementary ones? Or does their definition already resort to more complex explanatory and descriptive levels?
- (3) Which is the precise status of the relations the concept of supervenience is supposed to address? Is it a matter of mereological or formal-ontological co-belonging, or rather a matter of causation?

These sets of problems notably come to the fore when the original framework in which the debate on supervenience was formulated is compared with phenomenological approaches to property-relations. And, as several contributions in this issue show, both on the formal level of definition and on the material level of application, the phenomenological method can fruitfully define a framework against which to reassess the three just mentioned sets of problems related to supervenience.

Underlying the above listed problems, which become prominent once theories of supervenience are addressed from a phenomenological perspective, there is *one* crucial question, which concerns the very meaning of the concept of supervenience and can be formulated as follows:

Is the concept of supervenience a purely formal concept (pertaining to the formal ontology of possible objects and possible worlds, independently of their material properties), in itself neutral with respect to any metaphysical commitments regarding the material structures of reality, or does it rather entail some material commitments, e.g., to physicalisms, in which case its pretended formal character should be reconsidered?

This is the main question that should be kept in mind while reading the following pages.

2. The contributions in this issue

The contributors in this issue critically assess the implications of applying the concept of supervenience to address the mind-body problem (Mc Laughlin, Zhok, Corabi, and Forlé), the fact-values dilemmas (Rinofner-Kreidl and De Monticelli), social ontology and philosophy of science (Little), and the methods of epistemic clarification (Corabi).

Brian McLaughlin approaches the problem of the supervenience of mental properties upon physical properties by developing an analysis of Kim's 'dilemma for anomalous monism'. This dilemma refers to whether and how Davidson's account of supervenience can be said to consistently fit his general position regarding anomalous monism. After discussing the formal distinction between weak and strong supervenience, Kim argues that, if Davidson has weak supervenience in mind, then his account fails to clarify the dependency relations between mental and physical properties. Should he instead have strong supervenience in mind, he would have to reject anomalous monism. McLaughlin is not primarily interested in the *ad hominem* argument concerning Davidson's position. His aim is rather to examine whether Kim's dilemma represents a challenge for anomalous monism as such. Reconstructing both Davidson's position and Kim's objections, he argues that the latter's formulation actually points to a false dilemma, since anomalous monism shall be supplemented with the psychophysical determination thesis of strong supervenience. Yet, reformulating both horns of the dilemma, McLaughlin points to another and more serious dilemma for anomalous monism. The real problem, he argues, is whether anomalous monism can be supplemented by supervenience in such a way that makes it capable to capture how mental properties are dependent on and determined by physical properties, without collapsing into a dual aspect theory of propositional attitudes.

Andrea Zhok also develops his analysis of supervenience in relation to the mind-body problem. Beginning with a discussion of Davidson's view on supervenience and anomalous monism, Zhok argues that the understanding of 'monism' as equivalent to physicalism is not the only one at our disposal. Rather, a Spinozistic understanding of monism seems to be more apt to define the framework in which mental states can be plausibly considered to be dependent on bodily/material states, without being causally reducible to those states. Within this framework, supervenience should in principle express ontological dependence without implying any reduction. However, proceeding

in the examination of the concept of supervenience, Zhok eventually argues that this concept and the associated theoretical framework are not suitable to give a proper account of one essential feature of consciousness, namely its efficaciousness in the material world.

Sonja Rinofner-Kreidl's contribution focuses on moral supervenience. Adopting the phenomenological method of inquiry, the author critically addresses the question of whether and how the concept of supervenience can be adopted to define the status of moral properties, or, to better say, of complex intentional unities that entail moral properties, such as evaluative moral acts and their contents. Despite recognizing the role theories of supervenience have played in trying to cope with the 'queerness' of moral properties, after testing the descriptive accuracy of Audi's theory of moral supervenience, she ultimately rejects this view. Notably, she contends that the supervenience theory, which assumes the idea of 'anchoring' moral properties on natural properties, is based on a taken-for-granted and questionable view of *natural* properties. These are assumed as the already given basis upon which moral properties are anchored, or added up. Yet, as Rinofner-Kreidl shows by discussing the situation-related meaning of any moral act, natural properties simply cannot be taken for granted and assumed independently of their contextual significance. Thus, what is primarily problematic in the idea of moral supervenience is the general assumption concerning the status of both moral and natural properties, and this has an impact on the understanding of the complexity of the relevant situation. The alternative proposal the author develops is based on Husserl's account of mereological foundation, and notably on the application of the related formal ontological laws to evaluative acts and morally relevant situations. Resorting to the formal ontological laws of mereological foundation and connecting these laws to the idea of rational interrelation or interweaving of the layers of conscious life allows the author to avoid the circularity deriving from the unquestioned assumptions concerning natural properties, and to reassess the complexity of the ethical meaning of situations.

Daniel Little discusses the appropriateness of the concept of supervenience for the description of the relation between individuals and the social realm. In at least partial convergence with Rinofner-Kreidl, he introduces his central question by emphasizing that one of the main problems in theories of supervenience is that of avoiding misinterpretations concerning the status of basic properties. Subsequently, he proceeds in the attempt of formulating a

definition of supervenience that could be suitable in order to account for the relation between individuals and society. Different from both reductionism and emergence, supervenience seems to define a mid-way to understand property-relations. Little discusses the reasons that justify the scepticism concerning the applicability of such a concept of supervenience to several domains (for instance to describe the relation between physical and chemical properties). Yet, his main concern is to show why supervenience is ultimately not apt to properly address the relation between individuals and society. Supervenience describes an identity relation, and adopting it to characterize the social world would prevent us from recognizing genuine social properties, i.e., those properties that are not simply derivable from individuals and their junction. In conclusion, appealing to Fodor, he puts forward an alternative view in order to explain the nature of social properties: the “relative explanatory autonomy”. According to such a view, social properties shall not be investigated by recourse to lower-level properties, but rather by considering the explanatory autonomy of the so-called ‘meso-level’ of explanation.

Francesca Forlé’s paper aims to distinguish what can be legitimately taken as the supervenience base for cognition from the mere external causes thereof. Particularly, she addresses this distinction by critically assessing the argument made by Adam and Aizawa in order to support ‘intracranialism’ as opposed to the thesis of ‘transcranialism’ defended by both Noë and Chalmers/Clark. The author does not wish to defend the transcranialist thesis. Her argument is rather aimed at showing the internal difficulties in Adam and Aizawa supervenience account of cognition. The main difficulty she addresses concerns the claim that basic elements of cognition need to be non-derived representations, and that these can only be neural representations. Following such a claim, the supervenience base for cognition would coincide with neural representations. Forlé suggests that this premise in Adam and Aizawa’s argument does not hold, as it relies on an inadequate understanding of the naturalization of knowledge. Although the author does not reject the project of naturalizing mental processes, and notably cognition, she argues that such naturalization can only be consistent if it does not neglect the subjective basis of cognition. This seems to imply that a constitution based approach to the complexity of cognition shall be considered as superior to the supervenience based account, precisely due to the misleading assumptions underlying the idea of neural-representation base of cognition.

Joseph Corabi also addresses the use of supervenience in relation to the mind-

body problem, yet with a marked epistemological concern. More precisely, he discusses how the notion of supervenience can clarify the problem of mental causation also within an evolutionary framework. Corabi aims to show that the conceptual apparatus based on supervenience allows a more solid clarification of the evolutionary argument against epiphenomenalism than the one provided by William James. To this aim, he resorts to Bayes' probability framework, as a model of reasoning that is able to integrate new empirical evidence within an already established conceptual base. It may seem that, if one re-frames the distinction of the three main available positions regarding the mind-body problem (physicalism, interactionism, and epiphenomenalism) against the background proposed by the author, one would arrive at defending the monistic interpretation of physicalism. Yet, the author suggests that this conclusion only holds if we take supervenience as a metaphysical relation, but not if we assume it as a pure epistemic relation.

Roberta de Monticelli, in the article published for the section "The Paths of Method", addresses the potentials of the phenomenological method in order to address the status of values and normativity. Her methodological paper perfectly suits the overall topic of this issue, in that it begins by inquiring alternative views concerning values or axiological properties, which are at least in part addressed by what she calls the "supervenience dilemma". She distinguishes four ways of understanding the relation between natural and axiological properties, or the relation between facts and values: 1) non-cognitivism; 2) naturalistic realism; 3) anti-naturalistic realism; 4) constructivism. Her aim is to pinpoint a fifth and more viable option to understand that relation, which is made accessible by the phenomenological method with its systematic epistemological reassessment of the role of experience and intuition. According to De Monticelli, the essence of the phenomenological method is grasped by the following statement: "No theoretical problem about a type of thing S should be addressed but in the intuitive presence of some token or instance of S". Elaborating on such an understanding of the phenomenological method, notably in relation with the phenomenon of 'grasping a Gestalt' (e.g., in expressive phenomena), she argues that values have a place in a world of facts. This means that values - not only moral, but also aesthetic values - have a specific reality, which correlates to specific modes of apprehension. Accordingly, values are novel properties of the whole, which inform and individuate its founding parts. Eventually, such an approach allows her to reject queerness and dualism with regard to the fact-value relation, and nevertheless to claim that values are objective, given in and

through experience, intrinsically normative, and ideal.

3. Supervenience and Husserl's mereological foundation

In this last section, we would like to return to the question we phrased at the beginning. That question concerned the formal or rather material status of supervenience relations, and the possible underlying metaphysical commitments implied in theories of supervenience. As different contributions in this issue indicate, our question expresses the core of the problems that advocates of supervenience are called to address when it comes to apply the concept to the theory of experience.

In different ways, all articles published in this issue show that theories of supervenience do not address property-relations only from the point of view of formal ontology, and that they are not metaphysically neutral. Rinofner-Kreidl and De Monticelli, moreover, explicitly resort to the framework of Husserl's theory of foundational relations, developed in his *Third Logical Investigation*,³ in order to bring to the fore some of the assumptions that make supervenience different from a formal ontological law. In order to pave the way for a possible phenomenological reassessment of supervenience, we wish now to expand on the similarities and differences between the concept of supervenience and the phenomenological account of "mereological foundation", as Rinofner-Kreidl labels it.

The phenomenological concept of foundation is formalized by Husserl as an integral part of his theory of wholes and parts. Unlike classical mereology, Husserl's theory expresses the throughout holistic position that the global properties of a system as a whole can modify the properties and the behavior of its constituents in a way that cannot be either ontologically or epistemologically explained by remaining confined to the analysis of the constituents' properties (i.e., of those properties that should be considered as 'more basic' if one endorses the supervenience framework).

The concept of supervenience is comparable with one of the two essential types of wholes (and correspondent parts) pinned down by Husserl's definition of unitary foundation in §21 of the *Third Logical Investigation*.⁴

3 HUSSERL 1984, 227 f.

4 HUSSERL 2001, 34-35. We translate the adjective *einheitlich* of the syntagm *einheitliche Fundierung* with *unitary* following Giovanni Piana's Italian translation (cf. PIANA 1968) and not Findlay's English one (i.e. HUSSERL 2001). The latter prefers the term *single* and its cognate *singleness* (*Einheitlichkeit*) in the first branch of the definition of the foundation, while in the second branch (as well as in the entire §22!) he inconsistently opts for *unitary*. Since in Husserl's definition of foundation two *different forms of bounds of unity among parts* rather than the singleness of the whole is at stake, Findlay's translation

Husserl's understanding of ontological foundation can be regarded as a stronger version of the one-sided dependence relation mentioned above, according to which a content of the type B is founded upon a content of the type A,

if a B can by its essence (i.e. legally, in virtue of its specific nature) not exist, unless an A also exists.⁵

A *unitary* foundation is a specific form of foundation in which "every content is foundationally connected, whether directly or indirectly, with every content".⁶ Conni stresses the fact that Husserl distinguishes two essential types of unitary foundation and respectively two types of wholes and founding parts:⁷ the unity of the founding set may be founded either on a relation of mutual dependence, reciprocal foundation and interpenetration among all the parts of the set A with each other, or on the unitary foundation of a new content with a new set of global properties B founded on the plurality of the independent parts of the set A, and on all of them together.⁸ In the following formalisation, we refer exclusively to this second type of unitary foundation.

The contrast between this account of unitary foundation and the concept of supervenience relies on the formal ontological framework adopted to describe the type of bounds that unify individual properties of a set A (properties of the founding independent parts). Accordingly:

is not only unfaithful to the German term (*single* would be *einzig* or *einsam*, not *einheitlich*) but, even worse, conceptually wrong. Then Husserl (in Findlay's own translation of §22) considers "unity" (*Einheit*) as a "categorical predicate" (HUSSERL 2001, 37) and "the relations of 'foundations'" as "*the only true unifying factors*" (HUSSERL 2001, 36).

⁵ HUSSERL 2001, 34.

⁶ HUSSERL 2001, 34.

⁷ This distinction seems to have passed mostly unnoticed in the English literature. In fact, Findlay's translation completely omits the adverb *umgekehrt* (conversely) that stresses the logical disjunction between these two kind of foundations. Given the relevance of the following passage let's quote it extensively following Conni's layout that graphically underlines the essential distinction between two different Definitions of Unitary Foundation (DUF) (CONNI 2005, 81): DUF1: "By a Whole we understand a range of contents which are all covered by a [*unitary*] *foundation* without the help of further contents. The contents of such a range we call its parts. Talk of the [*unity*] *of the foundation* implies that *every content is foundationally connected, whether directly or indirectly, with every content*. This can happen in that all these contents are immediately or mediately founded on each other without external assistance; DUF2:] *or* [conversely], in that [*all together*] serve to found a new content, again without external assistance. In the latter case the possibility remains open that this unitary content is built up out of partial contents, which in their turn are founded on partial groups from the presupposed range of contents, just as the Whole content is founded on its total range." (our translation, based on HUSSERL 2001, 34; quoted following CONNI 2005, 80-81).

⁸ Accordingly, Conni defines the first essential type of whole 'pregnant structure' and the second type 'emergent structure'.

- i. a new set of global properties B emerges (bottom-up) and
- ii. the founding individual properties of the set A are themselves disposed according to the founded whole (described by the set B) in such a way that they become individualized (top-down) through
- iii. new individual properties C that are founded on the *unifying moments* in the founding parts of the whole (described by the set B). The set of properties C entails new properties of the founding independent parts, which are in a relation of reciprocal foundation with the properties of the set B and which were not properties of the set A.

If supervenience can be described as a bottom-up movement in which a novel high-level content with a set of properties B is founded by a group of low-level contents with a set of properties A, the supervenient structure (set B) should have – according to Husserl – a retroactive effect on the founding contents (set A) that found it as new higher-level content: in this foundation there is a kind of *ontological feedback* of new global properties (set B) of the supervenient whole on the founding contents. Accordingly, the latter are individuated top-down by the content they found.

Whereas the bottom-up movement of this concept of foundation is in line with the concept of supervenience, the top-down feedback of the founded whole on the properties of the founding parts is not. Eventually, the question that we shall ask is the following: Can we consider Husserl's concept of foundation as a formal ontological enrichment of the concept of supervenience or does the latter exclude any top-down effects of the supervenient properties as some authors suggest? We will argue that the former is in fact the case.⁹

Husserl's formal ontological description of this top-down feedback has interesting consequences for the indiscernibility requirement usually expressed in the definition of supervenience. Let's recall it:

A set of properties (B-properties) supervenes upon another set of properties (A-properties) if no two possible things can differ with respect to their B-properties without also differing with respect to their A-properties.

This definition takes no position on the direction expressed by supervenience

⁹ It should be noticed that, in order to appreciate such an enrichment, one would have to bracket the above mentioned metaphysical assumptions in the supervenience framework. These are implicit when supervenience is taken to address causal relations. Our attempt here is to be understood in purely formal ontological terms, i.e., as related to laws that are independent of and presupposed by material laws (including causality).

(bottom-up or top-down): it is somehow neutral in this respect. In fact, in the moral discourse of the “supervenience dilemma”, the introduction of the concept of supervenience suggests a top-down look, whereas in the mind-body application of the concept a bottom-up stance is presupposed.

In maybe the first occurrence of the term supervenience in analytic philosophy, the moral philosopher Richard M. Hare¹⁰ claimed that, if two persons are indiscernible with respect to natural properties, they are necessarily indiscernible with respect to moral goodness. Nonetheless, moral goodness is not entailed by the natural properties through which these persons and their actions can be described: moral goodness supervenes on natural properties. Yet, parallel indiscernibility of supervenient moral and other non-supervenient qualities still says nothing about either the reduction of moral properties to natural properties or the feedback of the former on the latter. Eventually we could consider the new properties of the founding parts as they are given in the set C (thanks to their reciprocal foundational relation with the supervenient global properties B) as not belonging to the supervenient properties B. This would mean that the set of properties C belongs to a set of property ‘non-B’, entailing also the set of properties A. The non-B and the B set would respect the indiscernibility requirement, too. Indeed the properties of the set C are properties that pertain to parts of the whole, just because they are individuated by the whole as *parts of this whole*. But, as both De Monticelli and Rinofner-Kreidl argue, a phenomenological concept of foundation articulates precisely these laws of dependence among the sets A, B and C, which allows us to even question the self-evident character of the claim that all non-B properties are basic, natural, and intrinsically defined. In fact, the set non-B is, according to the account of mereological foundation, already entangled with a reciprocal foundation with B. Therefore, if one stays with the implicit presupposition of the supervenience debate, i.e., that the non-supervenient properties are in a one-sided bottom-up dependence with the supervenient ones, and conflates set A with set C, then the concept of supervenience would contradict the account of mereological foundation: the set of properties A would be implicitly considered as A = non-B and therefore entailing the set of properties C.¹¹

According to the above mentioned definition of one-sided dependence,

¹⁰ HARE 1952.

¹¹ Actually, this conflation would contradict the concept of supervenience itself, since it would partially contravene the requirement of non-entailment (i.e. properties of the supervenient structures cannot be entailed in the founding one): if the properties of the set C, as bilaterally founded on B, would be considered as part of A, then some of the properties depending on the supervenient structure would be entailed in the founding one.

a set of properties B supervenes upon another set of properties A, if the two systems are in a relationship such as there cannot be changes in the supervenient set B without changes in set A, while there can be changes in A - the basis low-level - without changes in the set B.

In principle, top-down effects of the set of properties B on the founding set A would not contradict this definition. If supervenience involves only parallel indiscernibility and existential dependence, mereological foundation could eventually be considered as compatible with it, if, and only if, supervenience would admit the possibility of a kind of ontological feedback. Be that at it may, only the concept of mereological foundation can provide a description of this retroactive ontological relation.

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